

2023 IEEE Symposium on Industrial Electronics & Applications (ISIEA 2023)

**Kuala Lumpur, Malaysia
15-16 July 2023**



**IEEE Catalog Number: CFP2349H-POD
ISBN: 979-8-3503-4750-0**

**Copyright © 2023 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP2349H-POD
ISBN (Print-On-Demand):	979-8-3503-4750-0
ISBN (Online):	979-8-3503-4749-4
ISSN:	2373-5384

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

BeeNow - A Remote Beehive Monitor Using IoT.....	1
<i>Chitra Venugopal, Bhuvanewari Thangavel, Nathaniel Leascu</i>	
YOLOv5-M: A Deep Neural Network for Medical Object Detection in Real-Time.....	6
<i>Saba Bashir, Rizwan Qureshi, Abbas Shah, Xinqi Fan, Tanvir Alam</i>	
Factors Influencing Customers Intention to Use Digital Banking Services	12
<i>Evelyn Nathania Louis, Eduardus Steven Sartono, Elisa Patricia, Anderes Gui, Muhammad Shabir Shaharudin, Anwar Allah Pitchay, Razib Chandra Chanda</i>	
Development of an IoT-Enabled Automated Marine Sand Washing Machine with Conductivity Measurement	18
<i>Fei Siang Tay, Amelia Pei Sze Chai, Chiew Seng Lau, Mei Yun Chin, Victor Nee Shin Bong, Kuok King Kuok</i>	
Weigh-In-Motion Implementation Along North-South Expressway Malaysia.....	24
<i>A. Junid, S. I. Mat Said, A. Sulaiman, M. Y. Ab Wahab, M. R. Zolkapli, M. S. Ismail</i>	
Fin Configuration Affects Under Natural Convection Heat Transfer for Rectangular Fin Heatsink Using Steady-State Thermal Analysis	30
<i>Nur Amelia Binti Zahari, Yusnira Binti Husaini, Tuan Norjihani Binti Tuan Yaakub</i>	
Characterization of Heterostructure Capacitive Humidity Sensor Using Indirect Capacitance to Voltage Converter Circuit.....	36
<i>Nor Farhana Abdullah, Tuan Norihani Tuan Yaakub, Mohamad Hafiz Mamat, Yusnira Husaini</i>	
Design Half Bridge DC-DC LCC Series-Parallel Loaded Resonant Converter	41
<i>Ir. Mohamad Fauzi Bin Omar, Mazliza Binti Abdul Halim, Nooradzianie Muhammad Zin</i>	
The Role of Social Media on Purchase Decisions in Indonesia: Perspective of Z Generation.....	47
<i>Flouency Vellamy, Dini Agnes Wijaya, Anderes Gui, Muhammad Shabir Shaharudin, Anwar Allah Pitchay, Razib Chandra Chanda</i>	
Expense Tracking with Tesseract Optical Character Recognition V5: A Mobile Application Development	53
<i>Xin-Tong Koo, Kok-Chin Khor</i>	
Automating Conference Paper Assignment Using Classification Algorithms Incorporated with TF-IDF Vectorisation.....	58
<i>Seon Choon-Han Ngan, Ming-Jie Lee, Kok-Chin Khor</i>	
Convolutional Neural Network Object Detection Algorithm for Identifying Species of Panthera.....	64
<i>Muhammad Nur Akmal Yazid, Nor Afirdaus Zainal Abidin, Raihah Aminuddin, Asma Zubaida Mohamed Ibrahim, Noor Hasimah Ibrahim Teo, Siti Diana Nabilah Mohd Nasir, Raseeda Hamzah, Khyrina Airin Fariza Abu Samah</i>	
Bibliometric Analysis of Conjugate Gradient Method and Image Processing Using Scopus Database	70
<i>Nurul Hafawati Fadhillah, Nur Idalisa, Nurul Akmal Mohamed, Muhammad Azhan Hilmi, Mohd Rivaie, Imza Fakhri</i>	

Similarity Measures for Person Identification with Face Mask.....	76
<i>Muhammad Hakimi Huzaimi, Lucyantie Mazalan</i>	
Electric Load Forecasting Using Multiple Output Gaussian Processes and Multiple Kernel Learning	83
<i>Alireza Ghasempour, Manel Martínez-Ramón</i>	
Numerical Analysis of Comparison Highly Efficient Active Rectifier for Energy Harvesting Application.....	89
<i>Liew Hui Fang, Muhammad Izuan Fahmi Romli, Junaidah Ali Mohd Jobran, Norhanisa Kimpol, Diyya Hidayah Abd Rahman, Mohd Arif Mohd Zain</i>	
Video Analysis to Detect Dress Code Violations in Laboratories.....	95
<i>Muhammad Aiman Azizan, Norliza Zaini</i>	
Design and Development of a Cloud Based Dashboard for Indoor Vertical Farming System Using ThingsSentral.....	101
<i>Md Mahmud Yusuf, Mohamad Hanif Md Saad, Nurul Maisarah Hamdan, Shafrida Sahrani, Zulkhairi Bin Zainol Abidin</i>	
Implementation Tool Machine Learning Features Evaluation.....	106
<i>Ang Boon Chong, Ch'Ng Pei Chun, Cheah Wye Luon, Ngo Seow Yin, Lee Ching Yee, Chin Kevin Che Chau, Ng Kok Aur, Nor Affizal Amirah</i>	
Compact Dual-Layered Wideband Wearable Monopole Antenna with Circular Parasitic Element for Breast Cancer Detection	110
<i>Nur'Atika Binti Koma'Rudin, Zahriladha Zakaria, Nornikman Hassan, Mohd Manoi Jumidali, Ping Jack Soh</i>	
Artificial Intelligence Based System on Enhancing the Capabilities of Transport System: A Systemic Literature Review	116
<i>Muhammad Zain Malik, Shah Nazir, Habib Ullah Khan</i>	
IOT-Enabled Vacuum Cleaner Using Arduino.....	122
<i>Shafinaz Sobihana Shariffudin, Muhammad Benyamin Abdul Razak, Puteri Sarah Mohamad Saad, Hashimah Hashim, Mohamad Hafiz Mamat</i>	
Some Metaheuristics for Tourist Trip Design Problem	128
<i>Ngo Tung Son, Tran Thi Nguyet Ha, Jafreezal B Jaafar, Bui Ngoc Anh, Tong Truong Giang</i>	
Educational Data Mining: A Systematic Review on the Applications of Classical Methods and Deep Learning Until 2022	138
<i>Bui Duc Trung, Ngo Tung Son, Nguyen Duy Tung, Kieu Anh Son, Bui Ngoc Anh, Phan Truong Lam</i>	
A Single-Switch Bidirectional AC Chopper-Based Electronic Load Controller for Pico Hydropower System.....	153
<i>Samuel C. Ndukwe, Ramani Kannan, Ho Tatt Wei</i>	
Teaching Assignment Based on NASH Equilibrium and Genetic Algorithm.....	159
<i>Le Phuong Chi, Huynh Quyet Thang, Vu Thi Huong Giang, Ngo Tung Son, Bui Ngoc Anh</i>	
Enhancing Physicochemical and Dielectric Properties of Palm Oil-Natural Fiber Blends Through Varying Preparation Methods	166
<i>Siti Sarah Junian, Mohamad Zul Hilmey Makmud, Jedol Dayou</i>	

Preliminary Study on the Impact of GIC on Pipe-To-Soil Potential of Buried Pipeline Near Equatorial Region.....	171
<i>Maizura Mohd Sani, Nurhani Kasuan, Mohamad Huzaimy Jusoh, Ahmad Ihsan Mohd Yassin, Zakaria Hussain, Muhammad Asraf Hairuddin</i>	
An University Student Dropout Detector Based on Academic Data	177
<i>Bui Ngoc Anh, Nguyen Hoang Giang, Ngo Quang Hai, Trinh Nhat Minh, Ngo Tung Son, Bui Dinh Chien</i>	
Application of Reinforcement Learning to UR10 Positioning for Prioritized Multi-Step Inspection in NVIDIA Omniverse	185
<i>Fouad Bahrpeyma, Abishek Sunilkumar, Dirk Reichelt</i>	
Ultraviolet Disinfection for Bio-Contaminated Surfaces with Image-Based Navigation.....	191
<i>Azwati Azmin, Sherilyn Ak Bensen, Asmalia Zanal, Ida Rahayu Mohamed Noordin, Juliana Md Sharif, Samihah Abdullah</i>	
Design and Development of a GCash Cash-In and Cash-Out Machine	197
<i>Mark Joseph B. Enojas, Jane E. Morgado, Hohn Lois C. Bongao, Jefferson C. Rufo, Ruem G. Arribas, Cedithlyn P. Damiles, Lorie May M. Turallo, Kari Jan Zyra N. Talon</i>	
Detection and Mitigation of SQL and Jamming Attacks on Switched Beam Antenna in V2V Networks Using Federated Learning	201
<i>Tahir H. Ahmed, Jun Jiat Tiang, Azwan Bin Mahmud, Gwo Chin Chung</i>	
Leveraging Robust CNN Architectures for Real-Time Object Recognition from Conveyor Belt.....	207
<i>Nowrin Tasnim Moon, Sabiha Afrin Siddiqua, Shahana Parvin, Sidratul Muntaha, K. M. Mehedi Hassan, Rafeed Rahman, Moin Mostakim</i>	
AI Based Automated Food Recognition Using CNN for Fitness Mobile Application	213
<i>Atif Mahmood, Rafay Mahmood, Saaidal Razalli Azzuhri, Zati Hakim Azizul Hasan, Miss Laiha Mat Kiah</i>	
Hashtag Recommendation Based on Neural Topic Model	219
<i>Thunchanok Tangpong, Saranya Maneeroj</i>	
Emotion Recognition on Partial Faces with Histogram of Oriented Gradients and Local Binary Patterns	225
<i>Natagorn Kaewnoparat, Tanasanee Phienthrakul</i>	
Sustainable Energy-Based Voice-Controlled Home Automation Using IoT	231
<i>Sree Suvro Kumar Biswas, Arpita Sarkar Singdha, Labanya Talukder, Md. Hafizur Rahman, Prangon Das, Md. Manirul Islam</i>	
Hardware Requirements for 2D Cylindrical-High Pass Ladder Coil Design Enabling Homogeneous Excitation in Ultra High-Field MRI	236
<i>Shadeeb Hossain, Victor Taracila, Fraser J. L. Robb, James Moore, Simone Angela Winkler</i>	
RSSI Power Detector for Drone Charging Using Wireless Power Transfer	240
<i>Fatma S. Alawar, Nasir A. Quadir, Lutfi Albasha, Hasan Mir</i>	
Lotus - An Undergraduate Capstone Design Project Framework for Environmental Monitoring Applications.....	244
<i>Aqeel Aoro, Raymar Asanas, Duraid Gorgies, Ferdinand Mateo, Mark Bryan Navarro, Juan Raya, Rasha Shaaya, Ying-Khai Teh</i>	

Design of Load-Dependent Dual-Mode 12V to 5V Step-Down Voltage Regulator for MCU-CPU Powered Wireless Sensor System.....	248
<i>Dawod Rafoka, Ying-Khai Teh</i>	
FOUNDATION™ Fieldbus Cascade Control in the Field Tuning Using Particle Swarm Optimization.....	252
<i>Edgar T. Zapanta, Jeffrey T. Leonen</i>	
Soft Transition Scheme of Sensorless Controlled IPMSM for EV Compressor.....	258
<i>Dong-Hee Lee</i>	
Performance Analysis of IoT Mobile Edge Computing Networks Using a DF/AF UAV-Enabled Relay with Downlink NOMA.....	263
<i>Anh-Nhat Nguyen, Ngoc-Anh Bui</i>	
Three-Level DC-DC Buck Converter Architecture Using Digital Pulse Width Modulation.....	269
<i>Jyoshnavi Akiri, Venkata Naveen Kolakaluri, Lung-Jieh Yangt, Balasubramanian Esakki, Ponnan Suresh, Chua-Chin Wang</i>	

Author Index